In the Claims

Please enter claims 1, 2, 5, 8, 10, 13, 15, 19, 20, 26, 27, 28, 31, 34, 36, 39, 41, and 46 to read as follows:

1. (Amended) A method for identifying bioactivities or biomolecules using high throughput screening of nucleic acid comprising:

a) providing a gene library containing a plurality of clones, wherein DNA for generating the library is obtained from more than one organism;

b) encapsulating a bioactive substrate and at least one clone of the library in a gel microdroplet, wherein a bioactivity or biomolecule produced by the clone is detectable by a difference in the substrate prior to contacting with the at least one clone as compared to after the contacting; and

c) screening the microdroplet with an assay or an analyzer that detects the presence therein of the change in the substrate, wherein the change indicates the identity of the bioactivity or biomolecule.

2. (Amended) The method of claim 1, wherein the bioactivity is provided by an enzyme that is selected from the group consisting of lipases, esterases, proteases, glycosidases, glycosyl transferases, phosphatases, kinases, mono- and dioxygenases, haloperoxidases, lignin peroxidases, diarylpropane peroxidases, epozide hydrolases, nitrile hydratases, nitrilases, transaminases, amidases, and acylases.

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5. (Amended) The method of claim 4/C wherein the *Streptomyces* sp. is *Streptomyces venezuelae*.

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8. (Amended) The method of claim 7, wherein the expression library contains DNA obtained from extremophiles.

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10. (Amended) The method of claim 9, wherein the extremophiles are selected from the group consisting of hyperthermophiles, psychrophiles, halophiles, psychrotrophs, alkalophiles, and acidophiles.

A11 Sub C1

13. (Amended) The method of claim 1, wherein samples are heated before step b).

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15. (Amended) The method of claim 14, wherein the heating occurs for about 30 minutes.

19. (Amended) The method of claim 3/C wherein the prokaryotic cell is *E. coli*.

A13 Sub C1

20. (Amended) The method of claim 19, wherein prior to step b), the library in *E. coli* is transferred to a *Streptomyces* sp.

Sub C1

26. (Amended) A method for identifying bioactivities or biomolecules using high throughput screening of nucleic acid comprising:

a) providing a gene library containing a plurality of clones, wherein the nucleic acid for generating the library is obtained from more than one organism;

b) inserting a bioactive substrate into the clones of the library, wherein a change in the substrate is detectable in the presence of a bioactivity or biomolecule; and

A14

c) screening the clones with an assay or an analyzer that detects the presence therein of the change in the substrate, wherein the change in the substrate identifies the bioactivity or biomolecule.

27. (Amended) The method of claim 26, further comprising encapsulating the clone and the bioactive substrate prior to screening.

Sub C1

28. (Amended) The method of claim 27, wherein the bioactivity is provided by an enzyme that is selected from the group consisting of lipases, esterases, proteases, glycosidases, glycosyl transferases, phosphatases, kinases, mono- and dioxygenases, haloperoxidases, lignin peroxidases, diarylpropane peroxidases, epozide hydrolases, nitrile hydratases, nitrilases, transaminases, amidases, and acylases.

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31. (Amended) The method of claim 30, wherein the *Streptomyces* sp. is *Streptomyces venezuelae*.

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34. (Amended) The method of claim 33, wherein the expression library contains DNA obtained from extremophiles.

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36. (Amended) The method of claim 35, wherein the extremophiles are selected from the group consisting of hyperthermophiles, psychrophiles, halophiles, psychrotrophs, alkalophiles, and acidophiles.

A18 C1

39. (Amended) The method of claim 27, wherein samples are heated before step b).

A19

41. (Amended) The method of claim 40, wherein the heating occurs for about 30 minutes.

Please add the following new claims 54-55:

sub C1 A20

54. (New) The method of claim 26, wherein the bioactive substrate is a polynucleotide encoding a fusion protein comprising the substrate flanked by two fluorescent proteins that upon contact cause a change in fluorescent signal from the clone, and wherein the effect of the presence of the biomolecule or bioactivity is to cause such contact.

55. (New) The method of claim 54, wherein the substrate is a thioesterase.